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The Oil Chemist's Handbook. By ERASTUS HOPKINS, A.M., B.Sc., Chemist in charge of U. S. Laboratories, Boston, Mass. New York, John Wiley & Sons; London, Chapman and Hall, Limited. 1900. Pp. viii + 72.

This book is intended as a practical laboratory handbook for use in the examination of commercial oils and fats. Concise and satisfactory directions are given for the execution of the ordinary quantitative determinations which are made with materials of this class. The special and most valuable feature of the book, however, consists in the full tables which are given, and in their excellent arrangement. These include tables of general properties, solubility, adulterants and of constants. The tables of constants are duplicated by giving, first, a table arranged with reference to the oils, giving all of the important constants for each oil, and then tables for each constant, as saponification value, iodine value, Reichert-Meissl value, etc., with the oils arranged according to their numerical values for the given constant. The tables appear to have been prepared very carefully and the book is a very valuable one for those working in this field.

W. A. N.

The Calculations of Analytical Chemistry. By E. H. MILLER, Ph.D., Instructor in Analytical Chemistry and Assaying in Columbia University. New York, The Macmillan Co. 1900. Pp. 183.

As the author states in the preface: "This text-book is intended for use in scientific schools and colleges, in connection with courses in analytical chemistry, and aims to give a logical treatment of the calculations required by an analyst." "The object has been to furnish a text-book, which shall give the necessary information concerning those important chemical calculations which every student should thoroughly understand before taking up advanced work." "Formulæ have been avoided, except in the last chapters, so that the student shall consider each problem individually and solve it from a knowledge of chemical laws instead of substituting in formulæ for different cases."

The subjects taken up in this book are as follows: Calculations of chemical equivalents and

atomic weights; of formulæ and percentage; of mixtures having a common constituent; calculations from equations; calculation and use of factors; calculations of volumetric analysis; of density of solids and liquids; of gases; of calorific power and electric and electrolytic calculations for direct currents. The method involved in each case is clearly explained with example, and a number of problems for solution are given in each chapter. The author has brought together here in a compact form some of the most important calculations of analytical chemistry. Much of the material would be inaccessible to a student or perhaps worked out from formulæ given without any explanation of the principles involved. A number of tables are also given of values used in the calculations.

J. E. G.

SCIENTIFIC JOURNALS AND ARTICLES.

The American Journal of Physiology, December, has as its leading article 'The Reactions of Planarians, with and without Eyes, to Light,' by G. H. Parker and F. L. Burnett. They found that planarians without eyes tend to turn away from their course when directed towards the source of light and to keep in it when directed away from the source. This reaction, however, is less precise than in planarians with eyes. Planarians with eyes move more rapidly than those without eyes, and those moving away from the light than those moving towards it. Anne Moore contributes a paper on 'Further Evidence of the Poisonous Effects of Pure NaCl Solution.' According to her investigations pure solutions of the chlorides of Na, Ca, K, Mg, and Li are poisonous. The poisonous effects of a pure NaCl solution may be antagonized by Ca, although Ca is not necessary in itself, for it renders a sugar solution more harmful. K does not antagonize Na, but may antagonize Ca used in small quantities. In weak solutions sugar is as poisonous as isosmotic solutions of NaCl, but in stronger solutions this is not true. Young trout and tadpoles live indefinitely in distilled water, and in salt solutions if Na and Ca ions are in balanced proportions. The 'Influences of Digestion on Animal Heat Processes' are presented in a study by E. T. Reichert. He